Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Oak Ridge** Print Date: **3/9/2000**

Site Summary Level: **Oak Ridge Reservation** HQ ID: **0099**

Project **OR-341 / ORNL Surveillance & Maintenance - Def**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

The Oak Ridge National Laboratory (ORNL) Surveillance and Maintenance (S&M) program includes all of the remedial action sites (RA S&M), the surplus facilities (D&D S&M), and the S&M of sites and facilities after completion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) clean-up (Long Term S&M). The ORNL Water Quality Program is also included in this PBS.

The ORNL S&M program provides an integrated S&M function at RA sites and D&D facilities to ensure that they remain in compliance with the requirements of the EMEF Work Smart Standards including, but not limited to; the Price Anderson Amendment Act (PAAA) (10CFR820) and its Quality Assurance requirements (10CFR830.120) and Occupational Radiation Protection requirements (10CFR835); the Resource Conservation and Recovery Act (RCRA) (40CFR260-280); the Clean Water Act (40CFR122); and the requirements of CERCLA.

The ORNL Long Term S&M program is responsible for RA sites after remediation and for the operation and maintenance of active remediation systems. For sites where waste is left in place, the Long Term S&M program conducts activities to ensure that sites remain in compliance with the requirements of the Work Smart Standards.

The purpose of the ORNL Water Quality Program is to monitor releases from RA sites and D&D facilities to support cleanup strategies, as well as, monitoring ongoing CERCLA remediation systems for effectiveness.

The scope of work for the ORNL Surveillance and Maintenance Project includes the following subprojects:

a) Melton Valley (MV) Water Quality Program - This subproject includes activities necessary to conduct exit pathways, interior network, and performance assessment monitoring in the Melton Valley Watershed. Monitoring under this scope includes primarily groundwater, sediments, and surface water in the Melton Valley Watershed. Results of the MV Water Quality Program and the other Oak Ridge Reservation (ORR) watersheds will be coordinated by the Integrated Water Quality Program (IWQP). The IWQP will be responsible for the development of FY Sampling Plans, overall compilation of analytical data, and the reporting of this data in the annual Remediation Effectiveness Report (RER) for the Oak Ridge Reservation and the Annual Monitoring Report. The annual RCRA WAG 6 Ground Water Quality Report (GWQR) will be issued by the MVWQP.

b) ORNL D&D S&M - The purpose of the ORNL D&D S&M Project is to maintain surplus facilities at ORNL in a safe, stable, and environmentally sound condition. The surplus facilities associated with this project are:
- Oak Ridge Graphite Reactor Facility (Bldgs. 3001, 3002, 3003, and 3018)
- Homogeneous Reactor Experiment (Bldgs. 7500, 7502, 7554, 7557, 7558, 7559, 7561, and 7563)
- Oak Ridge Research Reactor (Bldgs. 3042, 3083, 3085, 3086, 3087, 3089, 3102, 3103, 3107, 3126, and 3139)
- High Radiation Level Chemical Development Laboratory (Bldgs 4507 and 4556)
- Low-Intensity Test Reactor (Bldg 3005)
- Metal Recovery Facility (Bldg 3505)
- Isotope Facilities (Bldgs 3028, 3029, 3030, 3031, 3032, 3033, 3033A, 3034, 3093, and 3118)

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- Tritium Target Facility (Bldg 7025)
- High-Level-Radiation Analytical Lab (Bldg 3019B)
- Integrated Process Demonstration Facility (Bldg 7602)
- Fission Product Pilot Plant (Bldg 3515)
- Fission Product Development Laboratory (Bldg 3517)
- Old Hydrofracture Facility (Bldg 7852)
- Pad (Facility 3099)
- Shielded Transfer Tanks (located outside Bldg 7819)
- Bulk Shielding Reactor Facility (Bldgs 3009, 3010, 3117, 3117A, 3098, 13822)
- Tower Shielding Reactor Facility (Bldgs 7700A, 7700B, 7701, 7702, 7703, 7704, 7705, 7706, 7707, 7716, 7720)

c) ORNL RA S&M - The objectives of the ORNL RA S&M program are to serve as custodians of RA sites prior to remediation, to facilitate the process of moving sites toward final remedies, and to coordinate S&M requirements with ongoing remediation projects.

The ORNL RA S&M program provides an integrated S&M function at these facilities to ensure that they remain in compliance with the requirements of the Bechtel Jacobs Company LLC Work Smart Standards including, but not limited to: PAAA (10CFR820) and its Quality Assurance requirements (10CFR830.120) and Occupational Radiation Protection requirements (10CFR835); RCRA (40CFR260-280); the Clean Water Act (40CFR122); and the requirements of CERCLA.

The ORNL RA S&M program provides access controls to minimize potential health hazards and ensures containment of residual radioactive and hazardous materials remaining at the sites/facilities.

d) ORNL Long Term S&M - The ORNL Long Term S&M project is responsible for S&M of RA sites after remediation and for the operation and maintenance (O&M) of active remediation systems. For sites where waste is left in place, the Long Term S&M project conducts activities to ensure that sites remain in compliance with the requirements of the Bechtel Jacobs Company LLC Work Smart Standards including, but not limited to the following: PAAA (10CFR820) and its Quality Assurance requirements (10CFR830.120) and Occupational Radiation Protection requirements (10CFR835); RCRA (40CFR260-280); the Clean Water Act (40CFR122); and the requirements of the CERCLA Records of Decision (RODs) or Action Memoranda. For active remediation systems, the program ensures that the systems remain effective, implements actions necessary to improve system performance as required, and supports the CERCLA five-year review and annual remedial effectiveness evaluation.
e) Bethel Valley (BV) Water Quality Program - The ORR IWQP was established by the United States Department of Energy (DOE) in 1996 to conduct long-term environmental monitoring and reporting throughout the ORR. The goals of the IWQP are two-fold: (1) provide data and technical analysis necessary to support groundwater and surface water management decisions and to gauge the effectiveness of remedial actions; and (2) ensure compliance with all CERCLA-mandated requirements pertaining to environmental monitoring.

There is a watershed-specific Water Quality Program for each of the five watersheds on the ORR (Bethel Valley, Melton Valley, East Tennessee Technology Park, Bear Creek Valley, and Upper East Fork Poplar Creek). The IWQP provides a central administrative and reporting function that integrates and coordinates the activities of the watershed-specific programs. The responsibility for scope, schedule, funding, and implementation of environmental monitoring (i.e., planning, sampling, analysis, and data validation) within a specific ORR watershed is assigned to the individual

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watershed.

Bethel Valley Water Quality Program (BVWQP) monitoring within Bethel Valley Watershed is intended to directly support technical and strategic decisions regarding the effectiveness of past and future remedial actions and the movement of contaminants within the watershed. The objectives of monitoring include: (1) establish a baseline of water quality for the watershed so that the effectiveness of planned remedial actions can be determined; (2) monitor groundwater and/or surface water pathways to gauge the effectiveness of remedial actions that have been implemented within the watershed; (3) evaluate monitoring data to support additional remedial action decisions within the watershed and assure the validity of assertions regarding hydrologic and contaminant conditions in site conceptual models; and (4) ensure that monitoring requirements of CERCLA decision documents are met for relevant sites.

The technical approaches for the ORNL Surveillance and Maintenance Project include the following:

a) MV Water Quality Program - Monitoring in support of CERCLA activities in the Melton Valley Watershed will be coordinated by the Melton Valley Watershed. The Bechtel Jacobs Company environmental sampling support subcontractor will conduct sampling. Sample analysis, tracking, data verification, data validation, data management and data submittal to OREIS will be the responsibility of the Sample Management Office (SMO) and the IWQP. The Melton Valley WQP organization will conduct monitoring activities associated with active waste management sites, including the IWMF, HDTF, the Tumulus and SWSA 5 North, provide coordination with other organizations that are conducting monitoring within the watershed (e.g., LMER Programs, etc.) and prepare RCRA required reports. The central IWQP will prepare the reservation wide SAPs and required monitoring reports (RER and Annual Monitoring Report).

The Melton Valley Watershed sampling and analytical requirements for each fiscal year will be determined in advance of the beginning of monitoring activities for that fiscal year and incorporated into the IWQP SAP. The SAP will include, at a minimum, monitoring locations, sampling media and method (i.e., grab, flow proportional, composite, etc.), frequency of sampling, a list of analyses, and analytical methods. Any changes to the SAP will be documented by addenda approved by the Melton Valley Watershed manager. The SAP will incorporate any modifications to the monitoring strategy that were identified during preparation of the prior year's annual monitoring report and/or RER.

The focus of the RER is evaluation of risk reduction within the watershed by the implementation of specific remedial actions. To be able to gauge a reduction in risk, monitoring may be conducted prior to the implementation of a remedial action so that a baseline can be established for comparison purposes. The need for baseline and post-remediation monitoring is identified in the project-specific Remedial Action Work Plans or Remedial Action Reports. The RER will provide any recommendations for changes to the monitoring program within the watershed for the subsequent year. The IWQP is responsible for preparing the report, which will include results of performance assessment monitoring for the Melton Valley Watershed, as well as other sites on or near the ORR.

An annual monitoring report is also prepared by the IWQP that will incorporate an evaluation of all monitoring results within the Melton Valley Watershed. The focus of this report is to gauge the overall condition of the watershed and to evaluate/modify the watershed conceptual model for contaminant transport.

An annual WAG 6 RCRA GWQR will also be developed utilizing groundwater assessment data from WAG 6 perimeter groundwater wells.

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b) ORNL D&D S&M - Bechtel Jacobs Company LLC personnel and associated subcontractors will provide overall project management services, field operations support and construction management services. Bechtel Jacobs Company LLC procurement personnel will prepare Requests for Proposals (RFPs) and procure the fixed price subcontract(s) to perform S&M. S&M activities will be conducted based on relevant procedures and at a level commensurate with the hazards of the facilities. S&M activities will be reduced as hazards are decreased and/or eliminated.

c) ORNL RA S&M - The scope of the ORNL RA S&M program is limited to only those activities that are required to meet the objectives of the Bechtel Jacobs Company LLC Work Smart Standards. The "Required" S&M at these sites and facilities is reviewed annually with DOE and is determined to be the minimum required activities. No additional one-time stabilization activities or 'special projects' are included in the LCB scope.

d) ORNL Long Term S&M - Routine S&M of Long Term S&M sites is limited to only those activities required by the Bechtel Jacobs Company LLC Integrated Safety Management Program and Work Smart Standards. S&M of active remediation systems is based on the performance requirements of the CERCLA decision document (i.e., Action Memorandum or ROD) and system engineering requirements.

e) BV Water Quality Program - Monitoring in support of CERCLA activities in the Bethel Valley Watershed will be coordinated by site personnel and will be accomplished by an integrated team of Bechtel Jacobs Company LLC and subcontractor resources. Sampling will be conducted by the Bechtel Jacobs Company LLC environmental sampling support subcontractor. Required drilling services will be obtained through a general drilling service subcontract. Sample analysis will be conducted by an approved SMO analytical subcontractor. Sample tracking, data verification, data validation, data management, and data submittal to the Oak Ridge Environmental Information System (OREIS) will be the responsibility of the SMO and the IWQP technical support subcontractor. The Central IWQP organization will provide coordination with other organizations that are conducting monitoring within the watershed (e.g., Lockheed Martin Energy Systems Defense Programs, Lockheed Martin Energy Research, Bechtel Jacobs Company Waste Management Operations, etc.), and prepare SAPs and required monitoring reports. The IWQP Central organization will also manage a central IWQP database compiled of analytical data from all ORR watersheds.

The Bethel Valley Watershed sampling and analysis requirements for each fiscal year will be determined in advance of the beginning of monitoring activities for that fiscal year and incorporated into the IWQP SAP. The SAP will include, at a minimum, monitoring locations, sampling media and method (i.e., grab, flow proportional, composite, etc.), frequency of sampling, a list of analyses, and analytical methods. Any changes to the SAP will be documented by addenda approved by the BVWQP manager. The SAP will incorporate any modifications to the monitoring strategy that were identified during preparation of the prior year's annual monitoring report and/or RER. The baseline will be updated annually to incorporate the approved SAP.

The focus of the RER is evaluation of risk reduction within the watershed by the implementation of specific remedial actions. To be able to gauge a reduction in risk, monitoring may be conducted prior to the implementation of a remedial action so that a baseline can be established for comparison purposes. The need for baseline and post-remediation monitoring is identified in the project-specific Remedial Action Work Plans or Remedial Action Reports. The RER will provide any recommendations for changes to the monitoring program within the watershed for the subsequent year. The IWQP central organization is responsible for preparing the report, which will include results of performance assessment monitoring for the Bethel Valley Watershed, as well as other sites on or near the ORR.

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An annual monitoring report is also prepared by the IWQP that will incorporate an evaluation of all monitoring results within the Bethel Valley Watershed. The focus of this report is to gauge the overall condition of the watershed and to evaluate/modify the watershed conceptual model for contaminant transport. As remedial actions within each of the ORR watersheds are implemented, the need for the IWQP Annual Report will decrease and the report will be phased out, as all monitoring will then be conducted solely to gauge remedial effectiveness.

Project Status in FY 2006:

MV Water Quality Program: Water monitoring for MV will have continued.

ORNL D&D S&M: The ORNL D&D S&M Project will have maintained surplus facilities at ORNL in a safe, stable, and environmentally sound condition.

ORNL RA S&M: Annual routine S&M will have continued for the RA sites through FY 2006. As the remedial actions for the site are completed, the post-action S&M scope will be moved to the Long Term S&M project.

ORNL Long Term S&M: Annual post action S&M will have continued for the RA & D&D sites through FY 2006.

BV Water Quality Program: In FY 2006, the BV Water Quality Program will be in the Post-Bethel Valley Groundwater Action monitoring phase. At this time, monitoring requirements for the Post-Bethel Valley Groundwater action monitoring phase are based on Bethel Valley RI/FS Alternatives C-3 and W-3 and draft Proposed Plan for Melton Valley. Changes in these monitoring requirements that are reflected in the final ROD for the Bethel Valley Watershed will be incorporated into the baseline for this project by a baseline change proposal.

Post-2006 Project Scope:

MV Water Quality Program: Monitoring of water for MV will continue.

ORNL D&D S&M: Activities include maintaining surplus facilities at ORNL in a safe, stable, and environmentally sound condition until their eventual demolition.

ORNL RA S&M: Routine S&M will continue until FY 2012.

ORNL Long Term S&M: Post action S&M will continue until FY 2013.

BV Water Quality Program: Post-Bethel Valley Groundwater Action water quality monitoring will be based on final groundwater actions and associated monitoring requirements agreed to in the final ROD. Bethel Valley water quality monitoring is scheduled to continue through FY 2013.

Project End State

The term end state as it applies to this PBS means that the routine S&M is complete for a given remedial site except for those sites which require post-action S&M. This PBS is considered complete when all routine S&M activities are no longer required because all remedial actions associated with the

Project Description Narratives

remedial sites have been completed. The Long Term S&M includes those activities which are required post action and have no defined end point. Long Term S&M ends in FY 2013 for this PBS element, but will need to be continued for sometime in the future thereafter.

Cost Baseline Comments:

The DOE EM Life Cycle Baseline that was recently issued in draft form from Bechtel Jacobs Company LLC to DOE-ORO is the cost basis for the PBS. Following development of scope statements, several methods were used for creating the cost estimates in the Life Cycle Baseline: use of cost estimating models, use of existing estimates, use of unit-price estimates, and extrapolation estimates. These are discussed below. 1. Cost Estimating Models - Cost estimating models were developed for use on the majority of new Remedial Action, Decontamination & Decommissioning, and Surveillance & Maintenance projects. These innovative models were prepared using the government-accepted RACER cost database or were based on historical cost data for similar local work. These models were utilized when no other estimates exist, or when the project team needed to increase the quality of an existing estimate. Additionally, these models were developed to include the appropriate level of estimate detail and quality for a life cycle baseline estimate. Approximately forty-five subprojects were estimated using this modeling approach. 2. Existing Estimates - Existing estimates were also used. These estimates range in quality from detailed Feasibility Study estimates to one-line entry estimates. Regardless of the level of existing estimate detail, these estimates were reviewed for accuracy and modified as required to adequately qualify the line-item cost data. 3. Extrapolation Estimates - Extrapolation estimates were typically derived from historical cost data and based on a required level of effort to perform a task or upon a historical production quantity. One example of en extrapolation estimate might be an estimate for the operation of a waste handling facility. In this example, the only available data might be the quantity of wastes handled per year and some historical costs for the different sub-operations of the facility over a given duration. To prepare a new estimate for planned out-year operations, extrapolations of these actual costs would be adjusted with logic from more recent cost trends and the Managing & Integrating Contractor approach/expectations. No matter which estimating method was used, each estimate was reviewed for errors, omissions, and consistency in approach across the DOE-ORO EM Program.

Safety & Health Hazards:

ORNL Melton Valley contains areas with high inventories of radioactive waste. Long half-life radionuclides pose a future potential risk for several areas. Several source areas contribute the majority of the tritium, strontium-90, and cesium-137 to surface water in concentrations that result in unacceptable risk levels at the point of discharge to the Clinch River and at points downstream. Several locations in White Oak Creek, Melton Branch, and other streams in the watershed exceed AWQC and recreational risk-based levels. Radiologically-contaminated surface soils are a significant problem exceeding the EPA target risk range for a recreational user or maintenance worker. The primary contaminants are cesium-137 and cobalt-60. Plutonium-239/240 is also of ecological concern. Radiological contaminants dominate the human health risk assessment; however, chemical contaminants detected in soil and sediment contribute to risk in several areas. Chemical contaminants (mainly mercury, nickel, chromium, PCBs, selenium, and molybdenum) dominant in the ecological risk assessment. Groundwater exceeds regulatory limits throughout much of the Melton Valley Watershed.

The major contaminants of concern for Bethel Valley are Sr-90 and Cs-137 in the facilities, soil, and groundwater. However, due to ORNL being a research laboratory, numerous other isotopes have been identified in the facilities, soil, and groundwater. The radiological hazards pose a further risk to the environment through continued migration. The hazards to the workers include radiological exposure from inhalation, contact, and general exposure. Workers are also placed in danger due to the deteriorated condition of the facilities when S&M activities must be performed.

Safety & Health Work Performance:

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The Integrated Safety Management System will be used on all projects to ensure that work is performed safely. The scope of work will be defined in subcontract or other work planning documents. Mission goals and expectations will be defined in the scope of work. Hazards will be analyzed and identified by both the Bechtel Jacobs Environmental Safety and Health (ES&H) Team and the subcontractor's Safety and Health personnel. An ES&H crosswalk has been developed as a tool to document environmental, safety, and health hazards for each subcontract. Controls are developed and implemented by identifying the standards and requirements using the Work Smart Standards and these standards are included as part of the ES&H crosswalk. After the hazards and the method of work accomplishment are identified, an Activity Hazard Assessment (AHA) is required for each activity or task. Work cannot be performed until all of the required safety documentation is completed and reviewed for accuracy. Workers must also be properly trained and participate in pre-job reviews. Workers are required to review the applicable AHAs as well as attend daily safety meetings. Feedback and improvement are included in each step of the Integrated Safety Management System. Changes to improve worker safety as well as worker involvement in safety are included as part of the feedback and improvement process. At any time workers can stop a work activity if there are questions about safety. In addition, the Bechtel Jacobs ES&H Team will conduct oversight of work activities to identify compliance with safety plans, improvement of worker safety, and any additional or unforeseen hazards.

PBS Comments:

Baseline Validation Narrative:

The Oak Ridge Operations Office Environmental Management Life Cycle Baseline (LCB) was submitted by the Managing and Integrating Contractor, Bechtel Jacobs Company LLC, to DOE-ORO on April 1, 1999. The final draft LCB will be submitted to DOE-ORO on June 1, 1999 after formal receipt and incorporation of comments. A validation of the baseline is in process using an independent contractor to DOE-ORO. The validation will be ongoing until complete and the final validation report is scheduled to be issued on June 25, 1999.

General PBS Information

Project Validated? **Date Validated:**

Has Headquarters reviewed and approved project? No

Date Project was Added: 3/10/1999

Baseline Submission Date: 7/1/1999

FEDPLAN Project? Yes

Drivers:

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
Y	Y	N	N	N	N	Y	Y

Project Identification Information

DOE Project Manager: Cavanaugh Mims

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DOE Project Manager Phone Number: 423-576-9481

DOE Project Manager Fax Number: 423-576-5333

DOE Project Manager e-mail address: mimsc@oro.doe.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	83,293	1,355,947	1,439,240	1,256	2,973				12,222	8,985	10,333	11,840	12,552	12,949	13,156
PBS Baseline (constant 1999 dollars)	76,569	558,106	634,675	1,256	2,973				11,971	8,619	9,708	10,896	11,313	11,431	11,375
PBS EM Baseline (current year dollars)	83,293	1,355,947	1,439,240	1,256	2,973				12,222	8,985	10,333	11,840	12,552	12,949	13,156
PBS EM Baseline (constant 1999 dollars)	76,569	558,106	634,675	1,256	2,973				11,971	8,619	9,708	10,896	11,313	11,431	11,375

	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS Baseline (current year dollars)	13,709	11,152	11,297	11,348	59,122	64,039	71,051	78,831	87,464	97,041	107,668	119,458	132,539	147,052	163,155	181,021
PBS Baseline (constant 1999 dollars)	11,609	9,250	9,177	9,029	44,215	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166
PBS EM Baseline (current year dollars)	13,709	11,152	11,297	11,348	59,122	64,039	71,051	78,831	87,464	97,041	107,668	119,458	132,539	147,052	163,155	181,021

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	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS EM Baseline (constant 1999 dollars)	11,609	9,250	9,177	9,029	44,215	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166	43,166

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%			2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project:

Current Projected End Date of Project: 9/30/2070

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):

Actual 1997 Cost: 2,973 **Actual 1998 Cost:**

Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars): -2,973

Inflation Adjustment (2.7% to convert 1998 to 1999 dollars): -80

Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): -3,053

Project Cost Changes

Cost Adjustments **Reconciliation Narratives**

Cost Change Due to Scope Deletions (-):

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Project Reconciliation

Cost Reductions Due to Efficiencies (-):	
Cost Associated with New Scope (+):	
Cost Growth Associated with Scope Previously Reported (+):	
Cost Reductions Due to Science & Technology Efficiencies (-):	
Subtotal:	-3,053
Additional Amount to Reconcile (+):	636,472
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**633,419**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
ORNL SURVEILLANCE & MAINTENANCE DEF - PROJECT START	OR341-001		10/1/1996								
ORNL SURVEILLANCE & MAINTENANCE DEF - PROJECT END	OR341-002		9/30/2070								
ORNL S&M - Def Mission Completion	OR341-003		9/30/2070								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
ORNL SURVEILLANCE & MAINTENANCE DEF - PROJECT START	OR341-001			Y							ORNL SURVEILLANCE & MAINTENANCE DEF - PROJECT START DATE FOR PBS
ORNL SURVEILLANCE & MAINTENANCE DEF - PROJECT END	OR341-002				Y						ORNL SURVEILLANCE & MAINTENANCE DEF - PROJECT END DATE FOR PBS
ORNL S&M - Def Mission Completion	OR341-003					Y					

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Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 20(
Rem. Waste														
Disposed	M3	37.00	27.00	64.00					0.00	11.00	9.00	3.00	3.00	3.(

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
Rem. Waste													
Disposed	M3	3.00	4.00	4.00	4.00	4.00	3.00	3.00	13.00				

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
Rem. Waste										
Disposed	M3									64.00